

WHAT IS CLAIMED IS:

1. An environmental impact estimation apparatus comprising:

5 a storage device which stores information concerning a plurality of first objects to be reused and a plurality of second objects to be recycled; and
10 a modeling device which perform life cycle modeling to generate a life cycle model, the life cycle modeling including reading the information concerning the first objects and the second objects from the storage device, selecting some of the first objects and second objects which are diverted to at least one new product from a recovery product using the information, and combining some of the first objects and the second
15 objects to fabricate the new product.

2. An apparatus according to claim 1, further comprising an environmental impact/cost estimating device which estimates an environmental impact and cost based on the life cycle model generated by the modeling device.

20 3. An apparatus according to claim 2, which further comprises a data base which stores environmental impact information and cost information, the environmental impact information concerning
25 respective stages of material acquisition for products, manufacturing, distribution, use, recovery and discharging, and wherein the environmental impact/cost

estimating device computes the environmental impact and cost of the entire series of multi-generation products based on information generated from the data base and the life cycle model obtained by the modeling device.

5 4. An apparatus according to claim 1, further comprising a predicting device which predicts a supply quantity of at least one of the first and second objects using the life cycle model generated by the modeling device, and an environmental impact/cost
10 estimating device which estimates environmental impact and cost to be burdened in the reuse or recycle from a prediction result obtained by this predicting device.

15 5. An apparatus according to claim 4, wherein the predicting device defines a period of using a product targeted for reuse by the life cycle modeling as a shorter value of a product worth life and a product useful life, and approximate-predicts a distribution of the number of manufactured products targeted for reuse by using an average number of manufactured products per unit period obtained by dividing the number of manufactured products by a manufacturing period.
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25 6. An environmental impact estimating apparatus according to claim 5, wherein the predicting device defines a manufacturing period from the start of manufacture to the entry of a next generation model.

7. An apparatus according to claim 5, wherein the predicting device defines an estimated manufacturing

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period as a period from the start of manufacture to the product worth life.

8. An apparatus according to claim 4, wherein the predicting device defines a period of using a product targeted for reuse as a shorter value of the product worth life and product useful life by the life cycle modeling, and approximate-predicts a distribution of manufactured products in number by using a triangle distribution having its peak value during entry of a next generation model.

9. An apparatus according to claim 4, which further comprises a data base storing environmental impact information and cost information, the environmental impact concerning respective stages of material acquisition for products, manufacturing, distribution, use, recovery and discharging, and wherein the environmental impact/cost estimating device computes the environmental impact and cost of the entire series of multi-generation products based on information generated from the data base and the life cycle modeling result caused by the modeling device.

10. A plan aiding apparatus using a recovery product, comprising:

a storage device which stores information concerning reuse and recycle objects;
a modeling device which performs life cycle modeling to generate a life cycle model, the life cycle

modeling including reading the information concerning the objects which configure a product from the storage device, selecting some of the objects which are diverted to a new product from the recovery product

5 using the information, and combining selected ones of the objects to fabricate the new product; and

a support device which supports the plan of the new product, the support device configured to allocate combined object symbols targeted for diversion and

10 an object symbol of the new product on a screen, and display input windows in correspondence with the object symbols and symbol to associate input product information with the object symbols and symbol, the input product information containing at least any of

15 information on product name, previous model, product useful life, product worth life, manufacturing start time, and number of manufactured products.

11. An environmental impact estimation method comprising:

20 storing information concerning first objects to be reused and second objects to be recycled in a storage; performing life cycle modeling to generate a life cycle model, the life cycle modeling including reading information concerning the first objects and the second

25 objects which configure a product from the storage device, selecting some of the first and second objects which are diverted to a new product from a recovery

product using the information, and combining selected ones of the first and second objects to fabricate the new product; and

5 estimating an environmental impact and cost based on the life cycle model.

12. A method according to claim 11, which further includes preparing a data base which stores environmental impact information and cost information, the environmental impact information concerning 10 respective stages of material acquisition for products, manufacturing, distribution, use, recovery and discharging, and wherein the estimating step includes computing the environmental impact and cost of the entire series of multi-generation products based on 15 information generated from the data base and the life cycle model.

13. A method according to claim 11, further comprising predicting a supply quantity of at least one of the first and second objects using the life cycle 20 model, and estimating environmental impact and cost to be burdened in the reuse or recycle from a prediction result obtained by the predicting step.

14. A method according to claim 13, wherein the predicting step includes defining a period of using 25 a product targeted for reuse by the life cycle model as a shorter value of a product worth life and a product useful life, and approximate-predicting a distribution

of the number of manufactured products targeted for reuse by using an average number of manufactured products per unit period obtained by dividing the number of manufactured products by a manufacturing period.

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15. A method according to claim 14, wherein the predicting step includes defining a manufacturing period from the start of manufacture to the entry of a next generation model.

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16. A method according to claim 14, wherein the predicting step includes defining an estimated manufacturing period as a period from the start of manufacture to the product worth life.

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17. A method according to claim 13, wherein the predicting step includes defining a period of using a product targeted for reuse as a shorter value of the product worth life and product useful life by the life cycle model, and approximate-predicting a distribution of manufactured products in number by using a triangle distribution having its peak value during entry of a next generation model.

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18. A method according to claim 13, which further comprises preparing a data base storing environmental impact information and cost information, the environmental impact information concerning respective stages of material acquisition for products, manufacturing, distribution, use, recovery and

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discharging, and wherein the estimating step includes computing the environmental impact and cost of the entire series of multi-generation products based on information generated from the data base and the life 5 cycle model.

19. A plan aiding method using a recovery product, comprising:

storing information concerning reuse and recycle objects in a storage;

10 performing life cycle modeling to generate a life cycle model, the life cycle modeling including reading information concerning objects which configure a product from the storage, selecting objects to be diverted to a new product from the recovery product 15 using the information and combining selected ones of the objects to fabricate the new product;

allocating combined object symbols targeted for diversion and an object symbol of the new product on a screen; and

20 displaying an input screen in correspondence with the object symbols and symbol to associate input product information with the object symbols and symbol, the input product information containing at least any 25 of information on product name, previous model, product useful life, product worth life, manufacturing start time, and number of manufactured products.

20. A predicting method for predicting product

recovery comprising:

inputting worth life of a product, useful life of the product, a recovery rate, a product manufacturing period, and the number of products;

5 generating a distribution of the number of products by calculating the average number of products based on the manufacturing period and the number of products;

10 generating a distribution of the number of recovery products by setting a recovery period corresponding to the manufacturing period and calculating the number of recovery products based on the number of products and the recovery rate; and

15 determining a product recovery time by a shorter one of the product worth life and the product useful life.

21. A predicting method for predicting product recovery comprising:

20 inputting worth life of a product, useful life of the product, a recovery rate, a product manufacturing period, and the number of products;

generating a triangle distribution of the number of products, the triangle distribution having a height corresponding to a peak of the number of products;

25 generating a triangle distribution of the number of recovery products by setting a recovery period corresponding to the manufacturing period and

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calculating the number of recovery products based on a recovery rate corresponding to the number of products; and

5 determining a product recovery time by a shorter one of the product worth life and the product useful life.

22. A computer program for an environmental impact estimation stored on a computer readable medium, comprising:

10 instruction means for instructing a computer processor to store information concerning first objects to be reused and second objects to be recycled in a storage;

15 instruction means for instructing the computer processor to perform life cycle modeling to generate a life cycle model, the life cycle modeling including reading information concerning the first objects and the second objects which configure a product from the storage device, selecting some of the first and second objects which are diverted to a new product from a recovery product using the information and combining selected ones of the first and second objects to fabricate the new product; and

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25 instruction means for instructing the computer processor to estimate an environmental impact and cost based on the life cycle model.

23. A computer program according to claim 22,

which further includes instruction means for instructing the computer processor to use a data base which stores environmental impact information and cost information, the environmental impact information 5 concerning respective stages of material acquisition for products, manufacturing, distribution, use, recovery and discharging, and wherein the estimating instruction means includes instruction means for instructing the computer processor to compute the 10 environmental impact and cost of the entire series of multi-generation products based on information generated from the data base and the life cycle model.

24. A computer program according to claim 22, further including instruction means for instructing the 15 computer processor to predict a supply quantity of at least one of the first and second objects using the life cycle model, and instruction means for instructing the computer processor to predict environmental impact and cost to be burdened in the reuse or recycle from 20 a prediction result obtained by a processing for predicting the supply quantity.

25. A computer program according to claim 24, wherein the predicting instruction means includes instruction means for instructing the computer 25 processor to define a period of using a product targeted for reuse by the life cycle model as a shorter value of a product worth life and a product useful life,

and instruction means for instructing the computer processor to approximate-predict a distribution of the number of manufactured products targeted for reuse by using an average number of manufactured products per 5 unit period obtained by dividing the number of manufactured products by a manufacturing period.

26. A computer program according to claim 25, wherein the predicting instruction means includes instruction means for instructing the computer 10 processor to define a manufacturing period from the start of manufacture to the entry of a next generation model.

27. A computer program according to claim 25, wherein the predicting instruction means includes 15 instruction means for instructing the computer processor to define an estimated manufacturing period as a period from the start of manufacture to the product worth life.

28. A computer program according to claim 24, wherein the predicting instruction means includes 20 instruction means for instructing the computer processor to define a period of using a product targeted for reuse as a shorter value of the product worth life and product useful life by the life cycle 25 model, and instruction means for instructing the computer processor to approximate-predict a distribution of manufactured products in number by using

a triangle distribution having its peak value during entry of a next generation model.

29. A computer program according to claim 24,
which further comprises instruction means for
5 instructing the computer processor to use a data base
storing environmental impact information and cost
information, the environmental impact information
concerning respective stages of material acquisition
for products, manufacturing, distribution, use,
10 recovery and discharging, and wherein the estimating
instruction means includes instruction means for
instructing the computer processor to compute the
environmental impact and cost of the entire series of
multi-generation products based on information
15 generated from the data base and the life cycle model.

30. A computer program stored on a computer readable medium for aiding a plan, comprising:
instruction means for instructing a computer processor to store information concerning reuse and recycle objects in a storage;
instruction means for instructing the computer processor to perform life cycle modeling to generate a life cycle model, the life cycle modeling including reading information concerning objects which configure a product from the storage, selecting objects to be diverted to a new product from the recovery product using the information and combining selected ones of

the objects to fabricate the new product and generate a life cycle model;

5 instruction means for instructing the computer processor to allocate combined object symbols targeted for diversion and an object symbol of the new product on a screen; and

10 instruction means for instructing the computer processor to display an input screen in correspondence with the object symbols and symbol to associate input product information with the object symbols and symbol, the input product information containing at least any of information on product name, previous model, product useful life, product worth life, manufacturing start time, and number of manufactured products.

15 31. A computer program stored on a computer readable medium for aiding a plan, comprising:

20 instruction means for instructing a computer processor to input worth life of a product, useful life of the product, a recovery rate, a product manufacturing period, and the number of products;

25 instruction means for instructing the computer processor to generate a distribution of the number of products by calculating the average number of products based on the manufacturing period and the number of products;

instruction means for instructing the computer processor to generate a distribution of the number of

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recovery products by setting a recovery period corresponding to the manufacturing period and calculating the number of recovery products based on the number of products and the recovery rate; and

5 instruction means for instructing the computer processor to determine a product recovery time by a shorter one of the product worth life and the product useful life.

32. A computer program stored on a computer readable medium, comprising:

10 instruction means for instructing a computer processor to input worth life of a product, useful life of the product, a recovery rate, a product manufacturing period, and the number of products;

15 instruction means for instructing the computer processor to generate a triangle distribution of the number of products, the triangle distribution having a height corresponding to a peak of the number of products;

20 instruction means for instructing the computer processor to generate a triangle distribution of the number of recovery products by setting a recovery period corresponding to the manufacturing period and calculating the number of recovery products based on a recovery rate corresponding to the number of products; and

25 instruction means for instructing the computer

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processor to determine a product recovery time by a shorter one of the product worth life and the product useful life.